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(54) Title: <b>METHOD FOR IMPLEMENTING A SOUND MESSAGE SEND/RECEIVE SERVICE IN A TELECOMMUNICATION NETWORK</b>			
(57) Abstract <p>The present invention concerns a method for sending a sound or musical tune message from a service user terminal device (1) or, alternatively, on the service user's request, to the terminal device (2) of another subscriber in short-message format. The method is adapted implementable by means of a mobile phone and/or a PC connected to a telecom network (3). According to the invention, the subscriber wishing to send a musical tune message selects the desired musical tune from the information displayed on his terminal device (1) and then selects the directory number or connection code of the recipient, whereupon said message is sent to the recipient's terminal device (2). In conjunction with the receipt of said musical tune message at the recipient(s) terminal (2), the sender's name and/or directory number, together with a possible text message, are displayed to the recipient. Hereupon, the recipient may activate said musical tune message and hear it and, if so desired, store the same in his terminal device (2) or, optionally, send the same to the terminal device of a third party.</p>			
<pre> graph TD     A[A-subscriber] --&gt; M[MTPK]     M --&gt; B[B-subscriber]     style A fill:#fff,stroke:#000,stroke-width:1px     style M fill:#fff,stroke:#000,stroke-width:1px     style B fill:#fff,stroke:#000,stroke-width:1px     </pre>			

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**Method for implementing a sound message send/receive service in a telecommunication network**

The invention relates to a method according to the preamble of claim 1.

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The invention also relates to a mobile phone, a service center and a terminal device suitable for implementing the method according to the invention.

It is an object of the invention to provide a method for sending a sound message (a tune) from a subscriber terminal device 1 or, alternatively, on a request sent therefrom, in a short-message format to a terminal device 2 owned by another subscriber. It is a further object of the invention to provide a technique for storing said sound message in a subscriber terminal device as the alarm signal of the terminal device's alarm clock.

15

In the art are known a method and system in which the connection data associated with a service provider or a service, such as the name, connection code, etc., are selected and activated in the subscriber's terminal device and, subsequently, are sent to the system switching center or to the recipient's terminal device or account. Also a method and system are known featuring the possibility of delivering messages comprised of successive tones or a text (such as short messages) to a subscriber terminal device or, vice versa, from the terminal device. Such embodiments are described, e.g., in FI patent applications no. FI 945,075, FI 962,553 and FI 962,961. On the basis of cited method, also systems have been developed in which the system switching center (server) has ring tones (e.g., popular music samples) stored therein so that a mobile phone subscriber can retrieve said ring tones into his mobile phone through the steps of reading a code (e.g., BVAZSAEP), e.g., from the service provider's www pages, by entering the code into his own terminal device and then sending said code as a short message to the short-message server/center, where the subscriber is identified and, based on said code, the ring tone ordered by the subscriber is sent to his mobile telephone. Next, the subscriber can play the delivered

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- ring tone and store it in his mobile phone's selection of ring tones, whereupon it can be used only as a ring tone. The implementation of this embodiment is possible in, e.g., mobile phone types Nokia 6110, 6150, 8810, 8110i and 9000i, however, without the possibility of retransmitting the received ring tone to another subscriber or using  
5 the same as the alarm signal of the mobile phone's alarm clock. Such a service provider can be found by contacting, e.g., Radiolinja's Jukebox service at <http://jukeboksi.radiolinja.fi> or Sonera's Doris service at <http://www.sonera.fi/nmt-gsm/doris/aanivaliisiin.html>.
- 10 The basic concept of these ring tone services is that a subscriber can order a desired ring tone from a service provider, whereby the ring tone data is sent only to his personal mobile phone, wherein it can be used as a ring tone for incoming calls.
- For some time, the service centers of telecom operators have also offered voice mail  
15 systems in which a subscriber can leave a voice message to the voice mail center, whereupon the destination party known as B-subscriber has been provided with the possibility of hearing said message by calling the voice mail center. Systems based on this concept operate so that, after receiving a voice mail message, the voice mail center sends the destination subscriber a message informing that one voice mail  
20 message has been received at the voice mail center. Then, the destination subscriber calls the voice mail center, receives instructions and enters his password, whereupon he is authorized to listen to the voice-mail messages addressed to him.
- A shortcoming of this arrangement is that no musical tune messages or melodic ring  
25 tones can be transmitted to another subscriber from the ordering pages of the service provider's www site or from the subscriber's personal terminal device. A further shortcoming is that the sending subscriber cannot *a priori* know whether the other subscriber has a terminal device suitable for receiving a melodic voice mail message.
- 30 It is an object of the invention to provide a feature service allowing a subscriber to send by means of his terminal device a musical tune message (MT) to another

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subscriber's terminal, by means of which device the musical tune message can be listened to, stored and/or retransmitted to the terminal device of a third party.

5 A further shortcoming of conventional techniques is that the alarm clock signal of a terminal device has been controllable only by the owner of the terminal device, whereby alarm signal information defined by others than the terminal device owner has been impossible to emit via the alarm clock device or in the same fashion as by an alarm clock.

10 The goal of the invention is achieved by providing a telecom network with a facility to deliver ring tones and the like particularly as a musical tune message to the terminal device of another subscriber. The invention is particularly characterized in that the sending party (e.g., the A-subscriber) is offered the possibility of sending a musical tune message (MT) to the terminal device of the another party later called 15 the B-subscriber. A preferred embodiment of the invention is also characterized in that the message received by a subscriber terminal device may also be used as the alarm signal of the terminal device's alarm clock.

20 Particularly advantageously, the musical tune message is played to the subscriber either from the alarm signal device at the loudness of the terminal device's alarm clock or from the earphone of a hands-free set at a sound pressure above the normal setting.

25 More specifically, the method according to the invention is characterized by the specifications disclosed in the characterizing part of claim 1.

The mobile phone according to the invention is characterized by what is stated in the characterizing part of claim 15.

30 The service center according to the invention is characterized by what is stated in the characterizing part of claim 16.

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The terminal device according to the invention is characterized by what is stated in the characterizing part of claim 17.

- 5      The invention has significant benefits. Instead of a mere voice mail message or text message, the user of the invention can send another subscriber of a short-message service a musical tune message (MT), whereby an unexpected type of novel feature service is offered to mobile phone users and service providers.
- 10     In the following, the invention is described in more detail with reference to appended drawings in which

Fig. 1 is a block diagram illustrating the equipment and system associated with the service; and

- 15     Figs. 2A and 2B show a flow diagram illustrating the send/receive arrangements of a musical tune message in two alternative embodiments.

- 20     Referring to the block diagram of Fig. 1, the invention described herein relates to a method for sending a voice mail message or musical tune message (MT) with the help of a subscriber terminal device 1 to the terminal device 2 of another subscriber. The method is applicable in a telecom network 4, part of which is formed by a musical tune message center 3, wherefrom the user by means of his terminal device can select a desired musical piece 5, then submit the directory number of the recipient's
- 25     terminal device 2 and thus send the musical piece to the recipient's terminal device 2, whose display subsequently indicates the greetings or other message received from the sender. Next, the recipient can after storage and/or activation of the received musical or voice-mail message listen to the same, store the same in his terminal device 2 and use the same as a ring tone, the alarm signal of the alarm clock of the
- 30     terminal device or retransmit the same to a third party.

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As shown in Fig. 1 and Fig. 2A, the process according to the invention begins from block 10, followed by block 11 in which the A-subscriber opens with the help of his terminal device 1 the www page of a musical tune message center MTPK 3 maintained by a service provider such as a telecom operator, where the stored musical pieces are selectable by certain codes/names and are so arranged that the A-subscriber 5 can enter in a certain field the mobile phone directory number (e.g., 050-5066728) of the recipient's (B-subscriber) terminal device 2. After the A-subscriber has entered the directory number of the B-subscriber 2 and selected his favourite musical piece, he can give the "send" command (by a certain keystroke or icon, etc.) 10 that in block 12 sends the musical tune message to the B-subscriber's mobile phone 2 over the telecom network 4. The B-subscriber's terminal device 2 indicates the greeting/message associated with the musical tune message as a short message (e.g., as text "*With love from me*") on the display of the terminal device 2. The B-subscriber can store and/or activate the musical tune message, as well as listen to or 15 store the same in his terminal device as is known from the listening and storing technique of ring tones. Before the desired musical tune message (MT) is sent to the B-subscriber's terminal device 2, MTPK 3 checks in block 13 the compatibility of B-subscriber's terminal device 2. If the check result is "YES", MTPK 3 sends in block 15 the musical tune message (MT) to the B-subscriber's terminal device 2. If 20 the result is "NO", MTPK 3 reports in block 14 the situation to the A-subscriber via his terminal device 1. Next, the B-subscriber's terminal device in block 16 indicates the message transmitted along with the received MT. At his will, the B-subscriber can activate the MT in block 17 and hear it.

25 Fig. 2B illustrates an alternative process in which the A-subscriber enters, after the start block 18, into his own mobile phone 1 the code of the desired musical piece stored in the musical tune message service center 3 and/or the name thereof (e.g., "BVAZSAEP" and/or "Holy night") and in block 19 the mobile phone directory number of the B-subscriber, and sends the information as a short message to the 30 service provider's service center 3, where the message is checked in block 20 and, when necessary, checks in block 21 whether the B-subscriber has a compatible

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terminal device and, subsequently, the ordered musical tune message is sent in block 23 to the B-subscriber's terminal device 2. If MTPK cannot retrieve sufficient data on the type of the B-subscriber's terminal device (e.g., because the B-subscriber may be a client of another network and therefore data on his terminal device is not available in the network, or some other reason prevents access to the needed data), MTPK sends a report on such a shortcoming to the A-subscriber and gives in block 22 the A-subscriber a choice whether or not to send the ordered musical tune message MT to the B-subscriber. Then, A-subscriber can decide whether to send the ordered MT to the B-subscriber although no firm information has been obtained on the existence of a compatible terminal device on the B-subscriber side. This choice can save the A-subscriber from unnecessary costs. Nevertheless, the A-subscriber can order the musical tune message MT to be sent to his own mobile phone 1 and then retransmit the message to the B-subscriber's terminal device 2 by dialing the B-subscriber's directory number. The user's terminal device (1, 2) contains all the necessary means for retransmitting the musical tune message to another subscriber or for storing the musical tune message into the alarm signal selection of the alarm clock of his terminal device.

MTPK may include a short-message center, an intelligent network or a portion of these facilities or, alternatively, comprise a www server or the like equipment.

Instead of a musical tune message, also a synthesized sound message may be used as the ordered message. Hence, the scope and spirit of the invention also covers synthesized sound sequences that cannot be categorized as music or speech in a strict sense.

A sound message is typically played from the alarm signal device of the terminal at a sound pressure approximately equal to that of the alarm signal proper.

Accordingly, at least the following alternatives are possible according to the invention:

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The telecom network is equipped to give a subscriber the possibility of sending a code and/or name defining the desired musical tune or sound message, together with the B-subscriber directory number, to a musical tune message service center 3, wherein the B-subscriber data and ownership of a compatible terminal device is 5 verified if necessary, after which the musical tune message ordered by the first subscriber is sent to the B-subscriber 2, the B-subscriber's terminal device 2 indicates the receipt of the musical tune message by displaying a text telling that said musical tune message has been received and, if so arranged, displays the sending party's text message (e.g., "With love"), and finally the B-subscriber can listen to said musical 10 tune message by activating/storing the same and, when so desired, retransmit the same to the terminal device of a third mobile phone user.

Furthermore, the system can be configured so that sending said musical tune message (MT) may be allowed from both the service user's terminal device (1) as well as 15 from said service center (3) to the terminal device (2) of the B-subscriber in a short-message format.

According to the invention, the mobile phone (1 or 2) used in the method may be allowed to receive, store, play and retransmit a musical tune message sent thereto. 20

Alternatively, the service center and/or the data base 3 thereof can be arranged to send to and indicate on the subscriber terminal device 1 the names and codes of available musical tune messages and provide thereon a recipient data entry field by means of which the service user can submit the recipient's directory number and then 25 select a desired musical tune message, whereby it is sent directly from the service center to the B-subscriber's terminal 2.

Moreover, the A subscriber allowed to submit the required data through sending the code and/or name of the musical tune message, together with the mobile phone 30 directory number of the B-subscriber, to the service center 3, where the necessary functions are carried out to send the musical tune message to the B-subscriber.

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The B-subscriber may be provided with a facility allowing the musical tune message, which is sent by the A-subscriber or, respectively, ordered by the A-subscriber to be sent, to be stored in his terminal device 2 or the smart card thereof (such as the SIM 5 card) and use the content of the message as the ring tone of his terminal device 2, alarm signal of his terminal device alarm clock or retransmit the message to a third party.

Service billing can be arranged according to the invention so that the A-subscriber is 10 billed by the service center 3 or a billing facility (such as a billing center) operating therewith for a musical tune message sent to the B-subscriber or, alternatively, a sufficient payment (e-cash) must be sent from the A-subscriber's terminal device in conjunction with the sending of the musical tune message to the account of the service center and/or the due party to receive the payment such as the service provider.

15

It is also possible to complement the billing of the musical tune message service by allowing the service center 3 or the billing center operating therewith to cater to the artists' royalty payments so that the latter will be paid in conjunction with the musical tune message transmission or thereafter to the artists' royalty payment account.

20

The invention also concerns a mobile phone 1, 2 to be used in conjunction with the use of the method according to the invention, said mobile phone including means for reception, storage and playing as well as retransmission of said sound message to the terminal device of a third party.

25

Furthermore, the invention concerns a service center comprising means for storage, reception and sending of musical tune messages, as well as means for receiving and/or storing the (B-subscriber) directory number of the recipient of the musical tune message, whereby said service center 3 also includes means for receiving the 30 code/name of the musical tune message and the destination B-subscriber directory number submitted from the A-subscriber's terminal device 1 so that said service

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center is capable of sending the musical tune message selected by the A-subscriber 1 to the terminal device 2 of the B-subscriber.

While the invention has been described above by making reference to one of its  
5 preferred embodiment, those skilled in the art will find a plurality of modifications possible within the inventive spirit and scope of the appended claims.

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What is claimed is:

1. Method for sending a message to the terminal device (2) of a mobile phone subscriber in a telecom network (4), said network incorporating a service center (3) wherein the subscriber identity is verified if necessary, characterized in that the sending party (e.g., the A-subscriber) is provided with a facility to send another terminal device (2) (e.g., the B-subscriber) a sound message (such as a musical tune message, MT) that can be listened to at least essentially at the same loudness as the normal alarm signal emitted by said terminal device (2).  
10
2. Method according to claim 1, characterized in that the message to be sent comprises a preselectable musical piece.
3. Method according to claim 1, characterized in that the message to be sent comprises a preselectable sampled or synthesized sound message.  
15
4. Method according to any of claims 1-3, characterized in that the identity of the client (1) ordering the service and/or the recipient of the message or his terminal device (2) is verified if necessary from a service code and/or directory number and/or name/code.  
20
5. Method according to claim 1, characterized in that the sending client is provided with a facility to select a desired sound message and enter the directory number of the B-subscriber on a www service page furnished by said service center (3) so that said www service page is displayed on the sending client's terminal device (1).  
25
6. Method according to claim 1, characterized in that the client (1) is provided with a facility to send the code and/or name of said desired musical tune message, together with the B-subscriber directory number, to said musical tune message service center (3), wherein the data of the B-subscriber and the compatibility  
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- ty of the B-subscriber's terminal device are verified if necessary, after which the musical tune message ordered by said client is sent to the B-subscriber (2), the B-subscriber's terminal device (2) indicates the receipt of the musical tune message by displaying a text telling that said musical tune message has been received and, if so arranged, displays the sending party's text message (e.g., "With love"); and finally the B-subscriber can hear said musical tune message by activating/storing the same and, when so desired, retransmit the same to the terminal device of a third mobile phone user.
- 10 7. Method according to claim 1, characterized in that sending said musical tune message (MT) may be allowed from both the service client's terminal device (1) as well as from said service center (3) to the terminal device (2) of the B-subscriber in a short-message format.
- 15 8. Method according to any of foregoing claims, characterized in that the mobile phone (1 or 2) used in the method is allowed to receive, store, play and retransmit a musical tune message sent thereto.
- 20 9. Method according to any of foregoing claims, characterized in that the recipient's terminal (2) is allowed to receive and play the musical tune message sent thereto immediately after the receipt thereof without any action from the user's side.
- 25 10. Method according to any of foregoing claims for sending and/or receiving musical tune messages via such a telecom network that incorporates a service center (3) or a data base (5) associated therewith, said data base containing therein in a stored format a plurality of music or sound messages or musical tune samples, together with their codes, names and the like data , characterized in that said service center and/or said data base (3) is arranged so that the names and codes of the musical tune messages are sent to the service user's terminal device (1) and are displayed thereon, together with a field serving for the entry of the recipient's directory number therein, whereby the service user can submit the recipient's directory number in the field and

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select the desired musical tune message and send the same directly from the service center to the B-subscriber's terminal device (2).

11. Method according to any of foregoing claims, characterized in that the A-subscriber is provided with a facility of entering the code and/or name of a musical tune message, together with the B-subscriber's mobile phone directory number, to send said data to said service center (3), wherein the necessary operations are carried out to send said desired musical tune message to said B-subscriber.
- 10 12. Method according to any of foregoing claims, characterized in that the B-subscriber is provided with a facility allowing the musical tune message, which is sent by the A-subscriber (1) or, respectively, ordered by the A-subscriber to be sent, to be stored in his terminal device (2) or the smart card thereof (such the SIM card) and, subsequently, use the content of the message as the ring tone of his terminal device (2).
- 15 13. Method according to any of foregoing claims, characterized in that the A-subscriber is billed by the service center (3) or a billing facility (such as a billing center) operating therewith for a music sample message or a musical tune message sent to the B-subscriber or, alternatively, a sufficient payment (e-cash) is required to be sent from the A-subscriber's terminal device in conjunction with the sending of said music sample message or said musical tune message to the account of the service center (3) and/or the due party to receive the payment such as the service provider.
- 20 25 14. Method according to any of foregoing claims, characterized in that the billing of the musical tune message service performed in conjunction with the sending of said message at said service center (3) or said billing center operating therewith takes into account the artists' royalty payments so that the latter will be paid in conjunction with the musical tune message transmission or thereafter to the artists' royalty payment account.
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15. Mobile phone (1, 2) suitable for use in the method according to any of foregoing claims, characterized in that said mobile phone (1, 2) includes means for reception, storage and playing as well as retransmission of said sound message to the terminal device (2) of another subscriber.  
5
16. Service center (3) suitable for use in the method according to any of foregoing claims, characterized in that said service center comprises means for storage, reception and sending of musical tune messages, as well as means for receiving and/or storing the (B-subscriber) directory number of the recipient of the musical tune message, whereby said service center (3) also includes means for receiving the code/name of the musical tune message and the destination B-subscriber directory number submitted from the A-subscriber's terminal device (1) so that said service center is capable of sending the musical tune message selected by the A-subscriber  
10 (1) to the terminal device (2) of the B-subscriber.  
15
17. Terminal device suitable for use in the method according to any of foregoing claims, characterized in that said terminal device (1 or 2) includes means facilitating the service user to store the received musical tune message into a format serving as the alarm signal of terminal device's alarm clock and to select and/or  
20 change said tune to serve as the alarm signal of the alarm clock.

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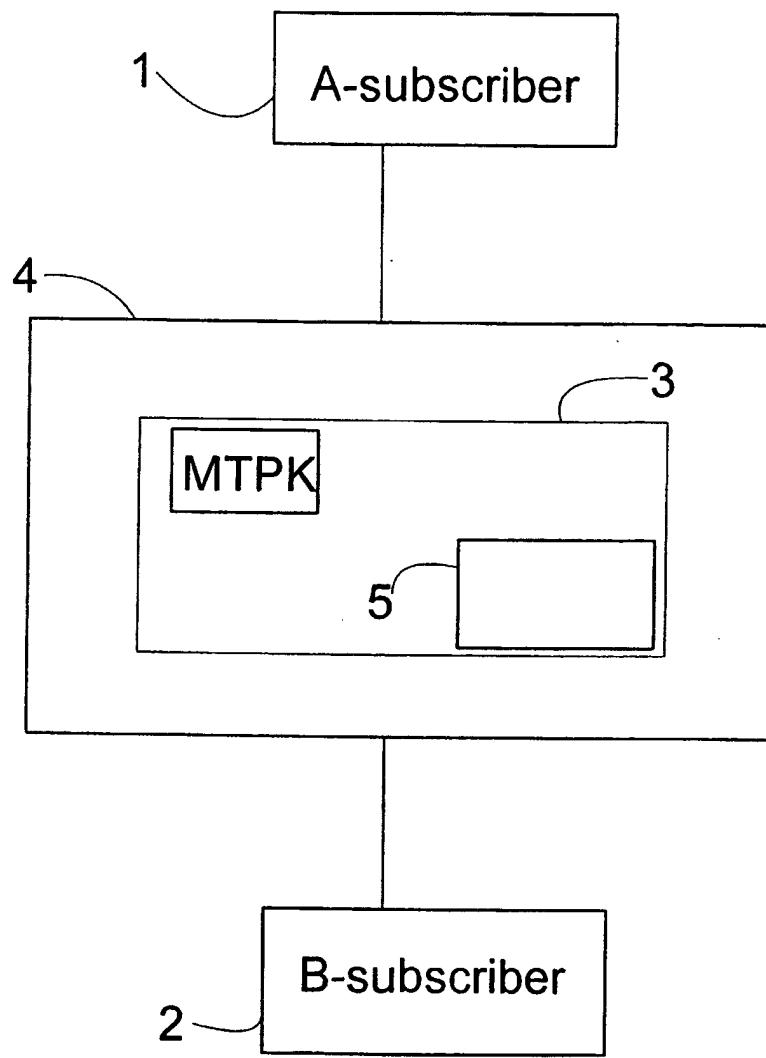


Fig. 1

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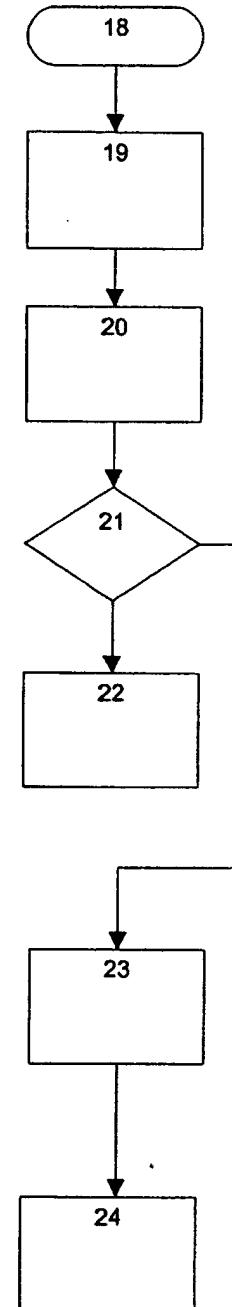
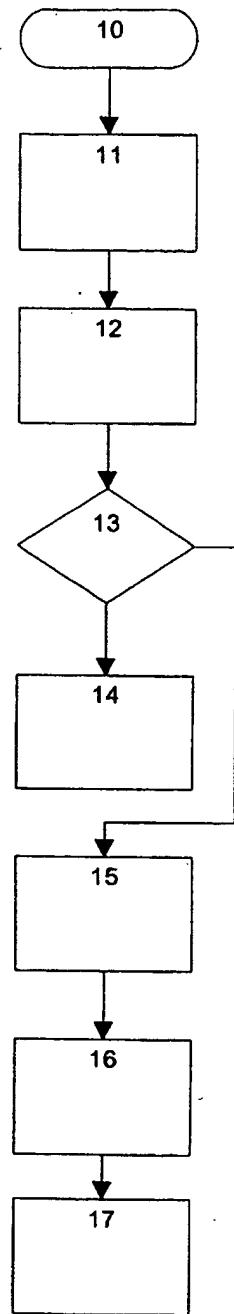


Fig. 2A

Fig. 2B